DESCRIPTION OF OPERATION

A. GENERAL: THE AIR HANDLER SUPPLIES CONDITIONED AIR TO A LAUNDRY FACILITY AREA AND OFFICE ZONE AS DEPICTED ON THIS PROCESS FLOW DIAGRAM DRAWING.
B. THE FACTORY PROVIDED DIGITAL DISTRIBUTIVE CONTROL SYSTEM (DDC) ON THE AIR CONDITIONING UNIT SHALL CONTROL ALL FUNCTIONS OF THE UNIT INCLUDING THE COMPRESSORS, CONDENSER FANS, AND ENERGY RECOVERY SYSTEM. THE FACTORY PROVIDED DIGITAL DISTRIBUTIVE CONTROL SYSTEM (DDC) ON THE AIR CONDITIONING UNIT SHALL BE CAPABLE OF FUTURE INTERFACE WITH THE EXISTING FACILITIES ENGINEERING CONTROL CENTER (EEC) WORKSTATION VIA AN INTEGRATED NETWORK CONNECTION.
C. THE FACTORY PROVIDED DIGITAL DISTRIBUTIVE CONTROL SYSTEM (DDC) ON THE AIR CONDITIONING UNIT SHALL BE CONFIGURED TO MONITOR, ALARM, AND CONTROL ALL I/O POINTS SHOWN ON THE AIR HANDLER PROCESS FLOW DIAGRAM AND THE POINTS LIST. THE OCCUPIED AND UNOCCUPIED MODES OF OPERATION SHALL BE MANIPULATED VIA THE DDC USING A TIME OF DAY SCHEDULE.
D. ISOLATION DAMPER CONTROL: A TWO POSITION DAMPERS SHALL BE INSTALLED IN THE OUTSIDE AIR SECTION OF THE AIR HANDLER TO ISOLATE WHEN THE SUPPLY FAN IS OFF. THE FACTORY PROVIDED CONTROLLER SHALL OPEN THE DAMPER PRIOR TO STARTING THE FAN. UPON LOSS OF FAN STATUS, THE DAMPER SHALL CLOSE. THE DAMPER END SWITCH SHALL BE WIRED TO THE FACTORY CONTROLLER FOR PROOF OF DAMPER OPEN POSITION. THE SUPPLY FAN SHALL NOT START UNTIL PROOF OF OPEN DAMPER IS ACHIEVED. IF THE DAMPER FAILS TO PROVE OPEN, THE SUPPLY FAN SHALL STOP.
E. HEAT RECOVERY TEMPERATURE CONTROL: THE HEAT RECOVERY COIL PUMP SHALL START AND PROVIDE WARM GLYCOL TO THE AIR HANDLER HEAT RECOVERY COIL WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW 55°F (ADJUSTABLE). THE HEAT RECOVERY COIL PUMP SHALL BE OFF WHEN THE OUTSIDE AIR TEMPERATURE IS ABOVE 60°F (ADJUSTABLE). A TEMPERATURE SENSOR SHALL BE INSTALLED AFTER THE HEAT RECOVERY COIL FOR DDC MONITORING AND ALARMING FUNCTIONS. IF THE OUTSIDE TEMPERATURE DROPS BELOW 32°F (ADJUSTABLE), THE 3-WAY VALVE ON THE GLYCOL SUPPLY PIPING SHALL MODULATE TO MAINTAIN A GLYCOL LOOP TEMPERATURE OF 32°F (ADJUSTABLE). ONCE THE OUTSIDE AIR TEMPERATURE IS ABOVE 34°F (ADJUSTABLE), THE 3-WAY VALVE SHALL BE POSITIONED TO ALLOW FULL FLOW THROUGH THE HEAT RECOVERY COIL AND THE SYSTEM SHALL BE RETURNED TO NORMAL OPERATION.
F. DISCHARGE AIR TEMPERATURE CONTROL: THE HEATING COIL CONTROL VALVE AND THE DX COOLING ARE MODULATED AS NECESSARY WITHOUT OVERLAP TO MAINTAIN A CASCADED DISCHARGE AIR TEMPERATURE SETPOINT BASED UPON THE LAUNDRY AREA SPACE TEMPERATURE.
G. FILTER MONITORING: THE DDC SHALL MONITOR THE FOLLOWING FILTER DIFFERENTIAL PRESSURE SIGNALS AND GENERATE ALARMS TO NOTIFY FOR FILTER REPLACEMENT.
   1. 30/30, 2" PLEATED PRE-FILTER AND 85% BAG FILTERS ON THE AHU.
   2. 30/30, 2" PLEATED FILTER ON ONE OF THE RETURN GRILLES IN THE AREA.
   3. 30/30, 2" PLEATED FILTER ON THE EXHAUST AIR.

H. FAN INTERLOCK: THE FOLLOWING SHALL OCCUR WHEN THE FAN IS ROUTINELY OFF.
   1. THE HEATING COIL VALVE SHALL CLOSE.
   2. THE TWO-POSITION OUTSIDE AIR DAMPER SHALL CLOSE.
   3. THE ASSOCIATED EXHAUST FAN SHALL STOP.
   4. THE COOLING CONDENSER FANS AND COMPRESSORS SHALL STOP.

I. FAN VFD CONTROL: THE VFD SHALL RUN AT A FIXED SPEED AS DETERMINED AT THE TIME OF SYSTEM AIR BALANCING FOR MAINTAINING MINIMUM SUPPLY AIR VOLUME.

EXHAUST SYSTEM
A. GENERAL ZONE EXHAUST
   1. THE EXHAUST FAN ASSOCIATED WITH THE AIR HANDLER IS DESIGNATED FOR GENERAL EXHAUST FROM THE AREA. THE EXHAUST FAN SHALL RUN AT ALL TIMES WHEN THEIR ASSOCIATED AIR HANDLER IS OPERATING.
   2. THE FACTORY PROVIDED CONTROLLER SHALL PERFORM START STOP FUNCTIONS FOR THE EXHAUST FAN BASED UPON THE STATUS OF THE ASSOCIATED AIR HANDLER. IF THE EXHAUST FAN LOOSES STATUS, AS SENSED BY CURRENT SENSING RELAY, AN ALARM SHALL ALSO BE GENERATED AT THE EEC FRONT-END.

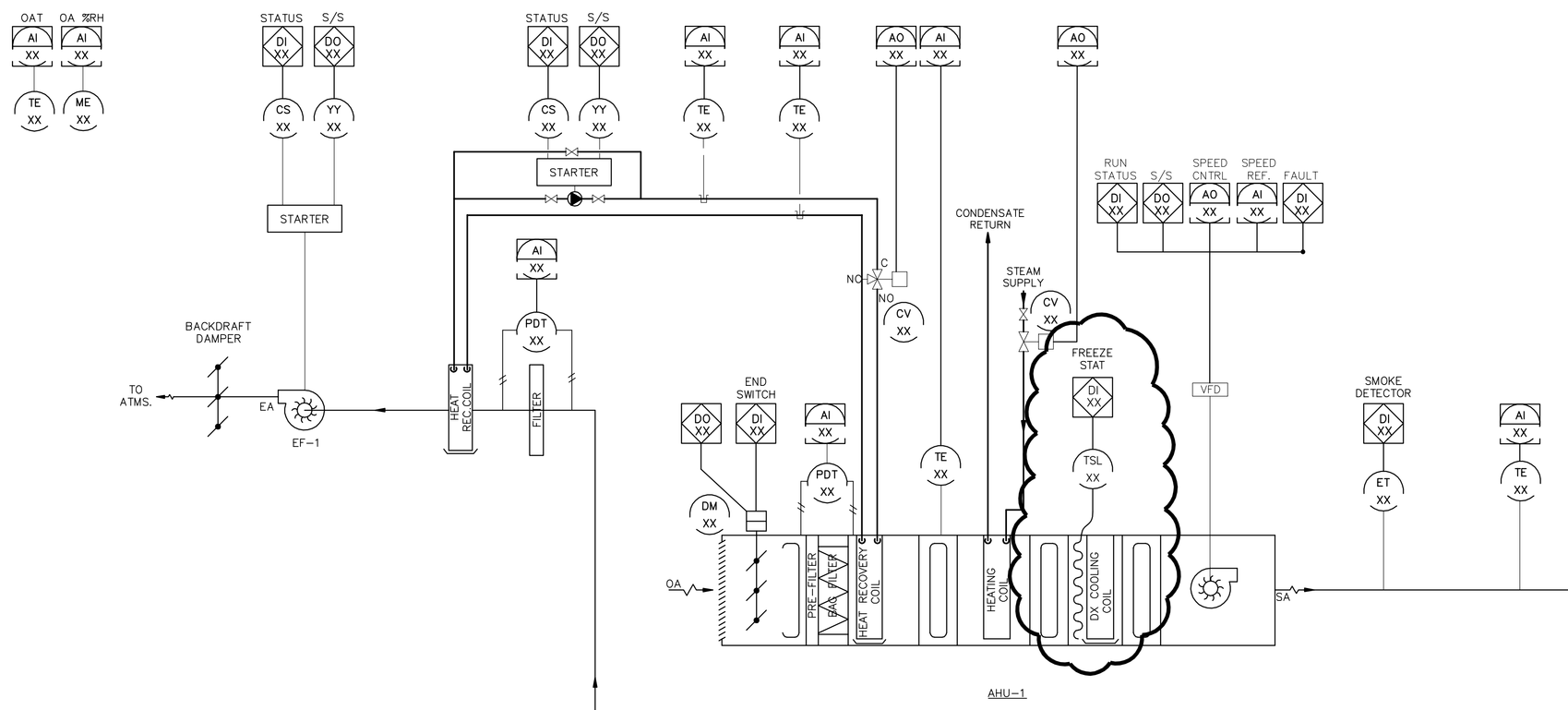
LAUNDRY AREA TEMPERATURE CONTROL:

   1. THE AIR HANDLER'S HEATING COIL CONTROL VALVE IS MODULATED AND THE DX COOLING IS ENABLED AS NECESSARY AND WITHOUT OVERLAP TO MAINTAIN A CASCADED DISCHARGE AIR TEMPERATURE SETPOINT BASED UPON THE LAUNDRY AREA SPACE TEMPERATURE.
   2. THE LAUNDRY AREA SPACE HEATING TEMPERATURE SETPOINT SHALL BE 68 DEGF (ADJUSTABLE).
   3. THE LAUNDRY AREA SPACE COOLING TEMPERATURE SETPOINT SHALL BE 80 DEGF (ADJUSTABLE).

OFFICE SPACE TEMPERATURE CONTROL:

   1. THE TERMINAL REHEAT ZONE SHALL DELIVER AIR TO THE OFFICE AND BREAK ROOM SPACES.
   2. A SPACE PNEUMATIC THERMOSTAT WILL MODULATE THE REHEAT COIL VALVE TO MAINTAIN A ZONE TEMPERATURE OF 74 DEGF (ADJUSTABLE).

FREEZE PROTECTION: THE FOLLOWING SHALL OCCUR UPON ACTIVATION OF THE FREEZESTAT.
   1. THE SUPPLY FAN SHALL STOP.
   2. THE OUTSIDE AIR DAMPERS SHALL CLOSE.
   3. THE HEATING COIL CONTROL VALVE SHALL FULLY OPEN.
   4. DISABLE DX COOLING CIRCUITS.
   5. THE FREEZESTAT RESET SHALL BE A MANUAL OPERATION.



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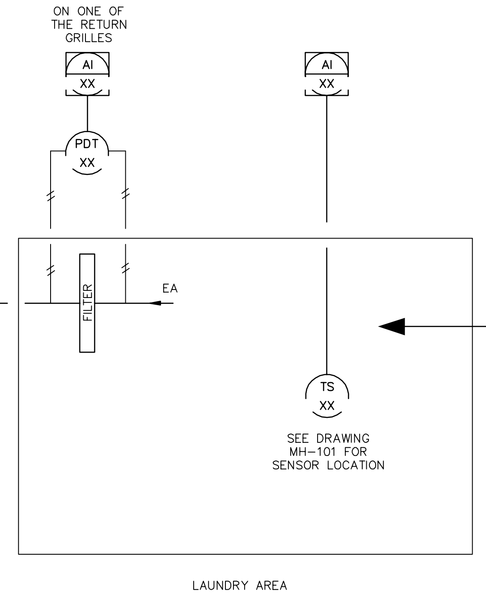
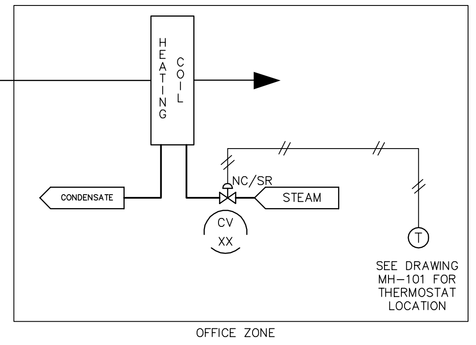


LAUNDRY AREA



OFFICE ZONE

CONTROL AND INSTRUMENT LEGEND

- DIGITAL INPUT
- DIGITAL OUTPUT
- ANALOG INPUT
- ANALOG OUTPUT
- CONTROL VALVE
- CURRENT SWITCH
- DAMPER MOTOR
- ELECTRONIC TEMPERATURE SENSOR
- PNEUMATIC CONTROL VALVE
- DIFF PRESSURE TRANSMITTER
- INTERFACE RELAY
- TEMPERATURE ELEMENT
- EQUIPMENT TERMINATION
- HUMIDITY SENSOR
- ZONE PNEUMATIC THERMOSTAT. FURNISHED AND INSTALLED BY CONTROLS CONTRACTOR
- ELECTRIC CONTROL DAMPER/MOTOR
- ELECTRONIC CONTROL VALVE

ERDMAN ANTHONY
2165 Brighton Henrietta Town Line Rd.
Rochester, NY 14623-2755
Telephone 585 427 8888
Facsimile 585 427 8914
www.erdmananthony.com

NO.	DATE	DESCRIPTION
		REVISIONS

SHEET TITLE: AHU-1 PROCESS FLOW DIAGRAM

BLDG. NO.: 10

PROJECT TITLE: STEAM COIL REPLACEMENT FOR B-10 LAUNDRY

DRAWN: FE | CHECKED: TJ | DATE: 02/17/12

APPROVED CHIEF, ENGINEERING SERVICE

DRAWING NUMBER: 10-MH-801

DWG. 3 OF 3

APPROVED DIRECTOR, VAMC, CANANDAIGUA

PROJECT NUMBER: VA-528-09-RP-0100

V.A. MEDICAL CENTER

LOCATION: CANANDAIGUA, NY 14424